THE HANFORD SITE

324 Building Update

Ben Vannah
U.S. Department of Energy

Agenda

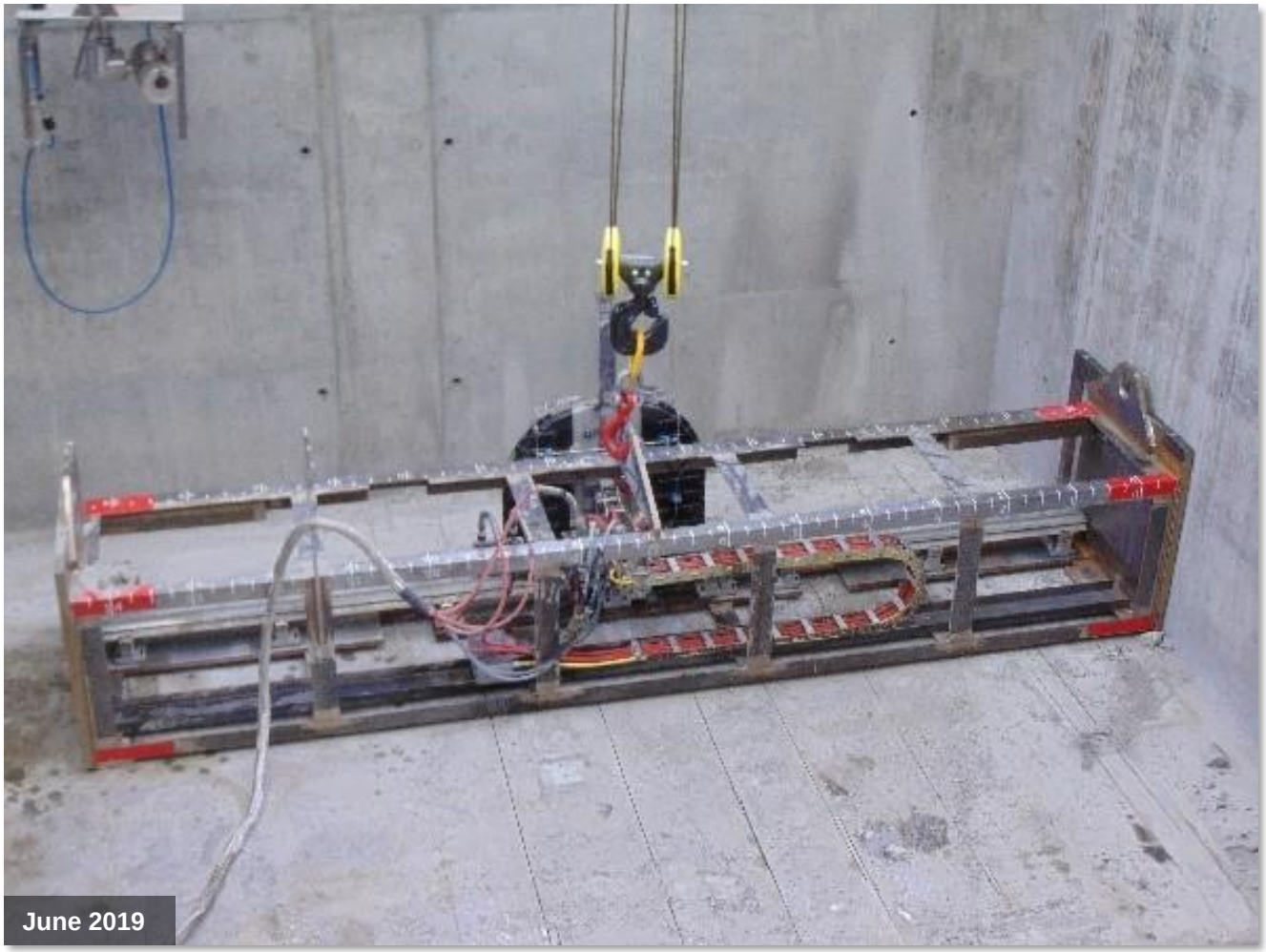
- Project Schedule
- Floor Saw
- Room 18 (Drilling) Contamination Controls
- Groundwater Monitoring
- Recent Accomplishments

Project Schedule

- Two Tri-Party Agreement milestones renegotiated in June:
  - M-016-85A (remote soil excavation) – due September 30, 2021
  - M-016-85 (324 demo and final soil excavation) – due September 30, 2025
- Schedule of key activities:

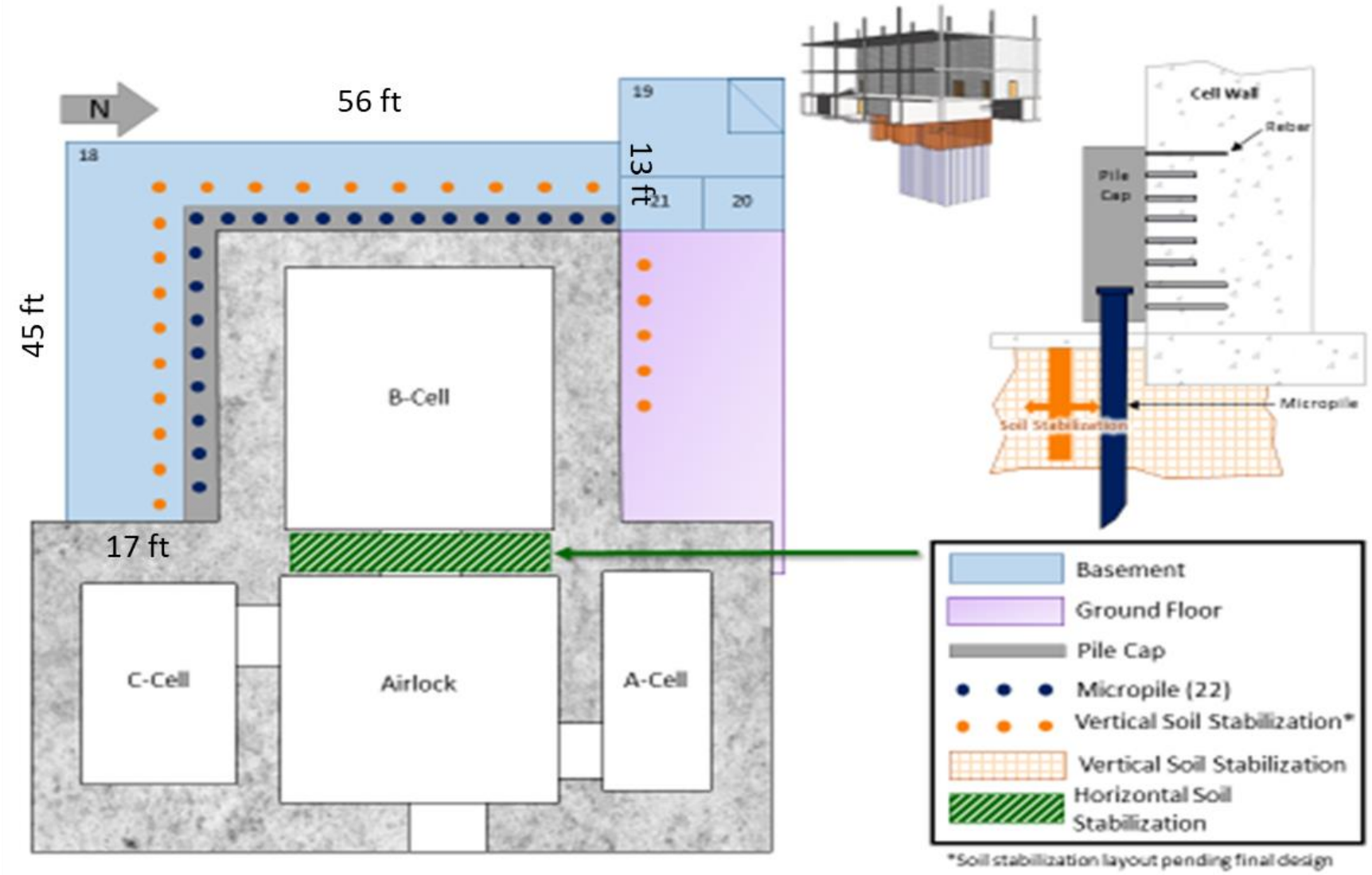
Activity	Time Frame
Remove B-Cell Debris and Grout	July 2019–November 2019
Floor Scoring	October 2019–November 2019
Floor Removal	January 2019–March 2020
Remote Soil Excavation (to footer)	April 2020–September 2020
Structural Modifications	March 2019–November 2020
Remote Soil Excavation (below footer)	November 2020–May 2021

Floor Saw Status



Floor Saw Testing at the 324 Building Mock-up

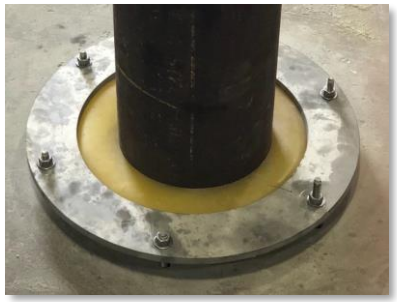
324 Building Micropile Placemat



Pilot Hole No. 1 – Events

- **March 13, 2019** – Initiated drilling first pilot hole. Release of contamination to room 18 after drilling 4 feet.
- Corrective actions:
  - Vacuum capture collar
  - Modified drill rig to drive the casing instead of rotating to prevent wear on seal
  - Upon restart, no further dust/contamination issues were noted

Teflon Inner Seal

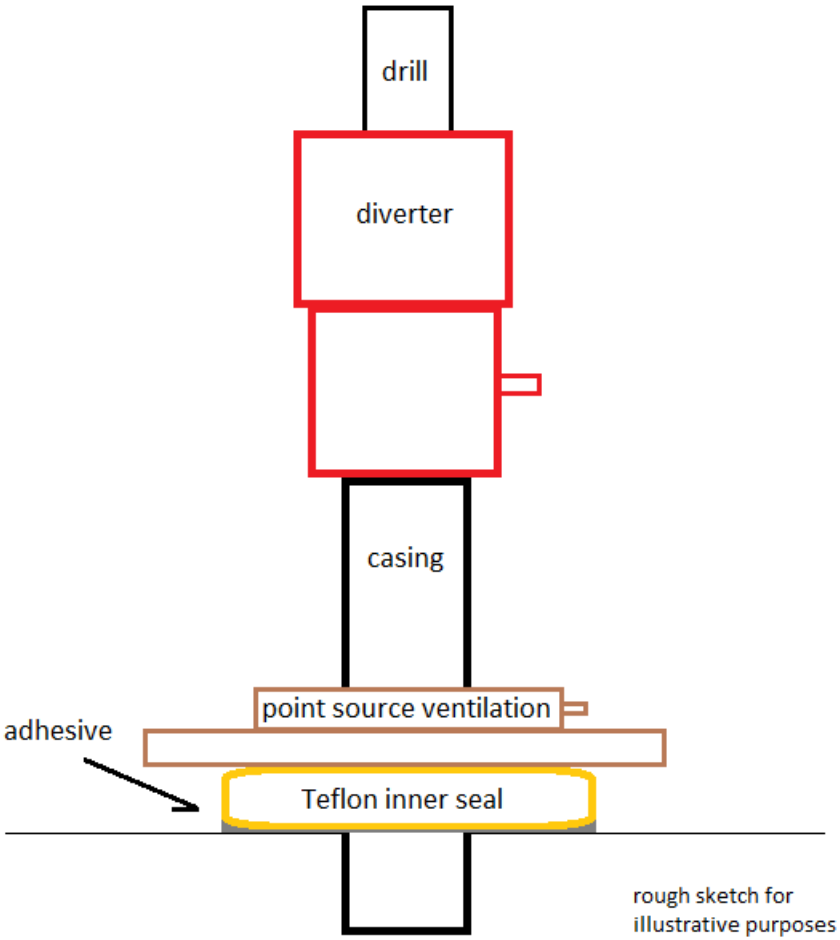


Teflon Inner Seal with Collar Bolted to Floor

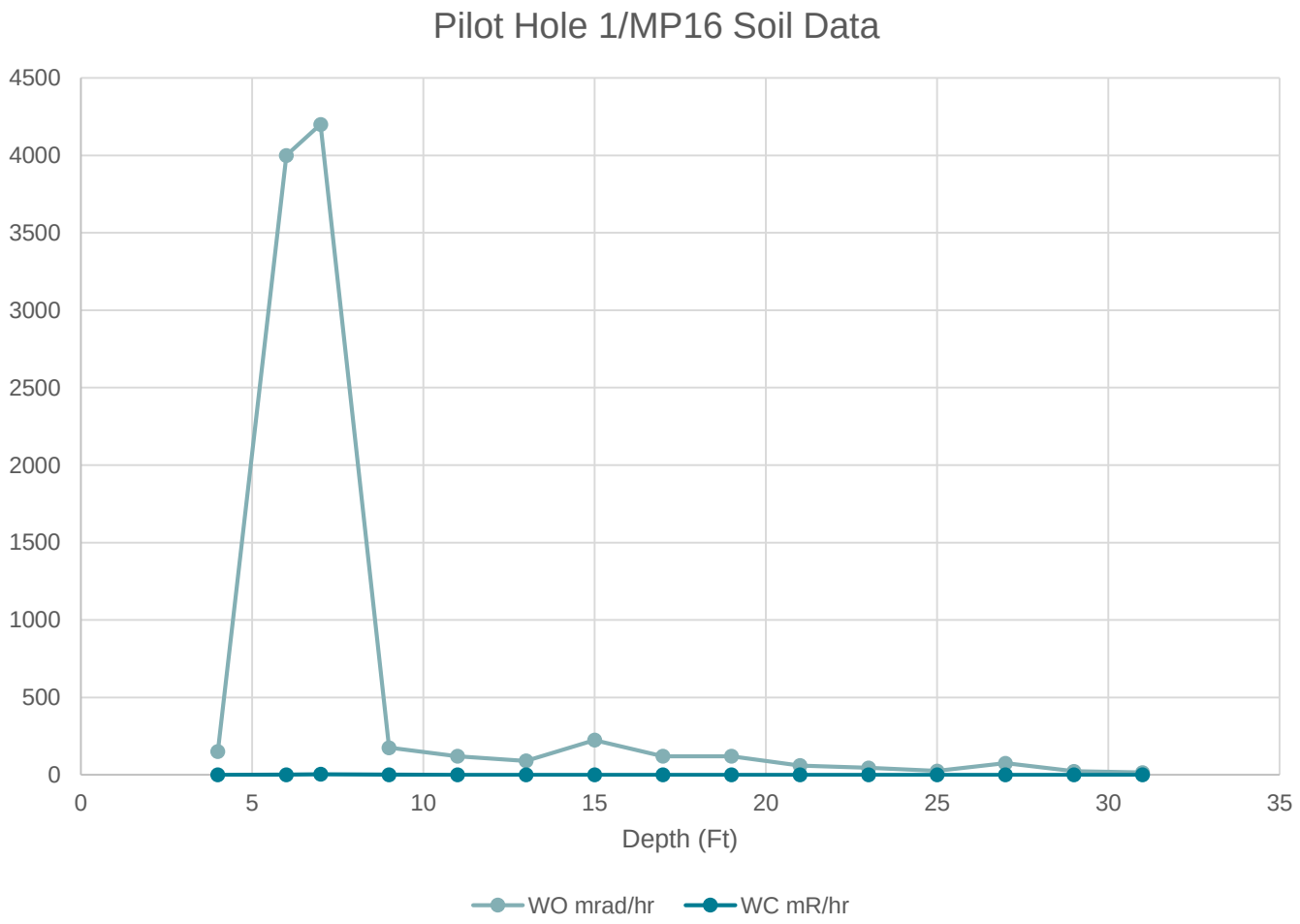
Collar with Point Source Capture

Pilot Hole No. 1 – Events (Cont.)

- **June 6, 2019** – Drilled to 15 feet
  - Identified dust/sand in a “fan-like” shape on floor around casing
  - Found contamination on left thigh of modesty clothing at 3,755 disintegrations per minute (dpm)/100 cm² ß-γ
- Corrective actions:
  - Used adhesive to seal the Teflon inner seal to the concrete surface
  - No further indications of contamination from beneath the inner seal
- Completed first pilot hole June 12, 2019
- Drilling timeline: 6 days



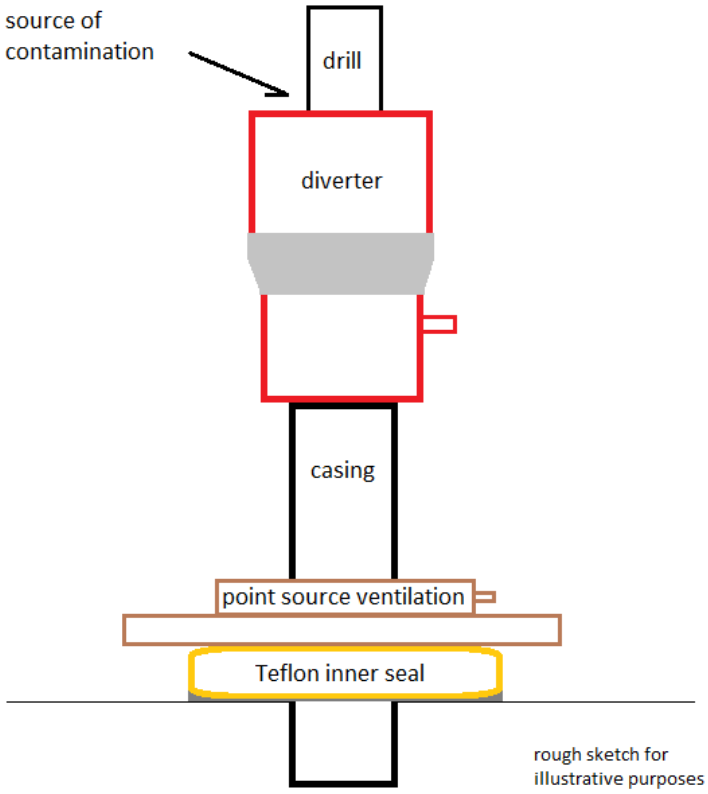
Pilot Hole No. 1 Soil Radiological Data



Soil Samples Taken Remotely from Cyclone Separator in Drill Cuttings Exhaust Train

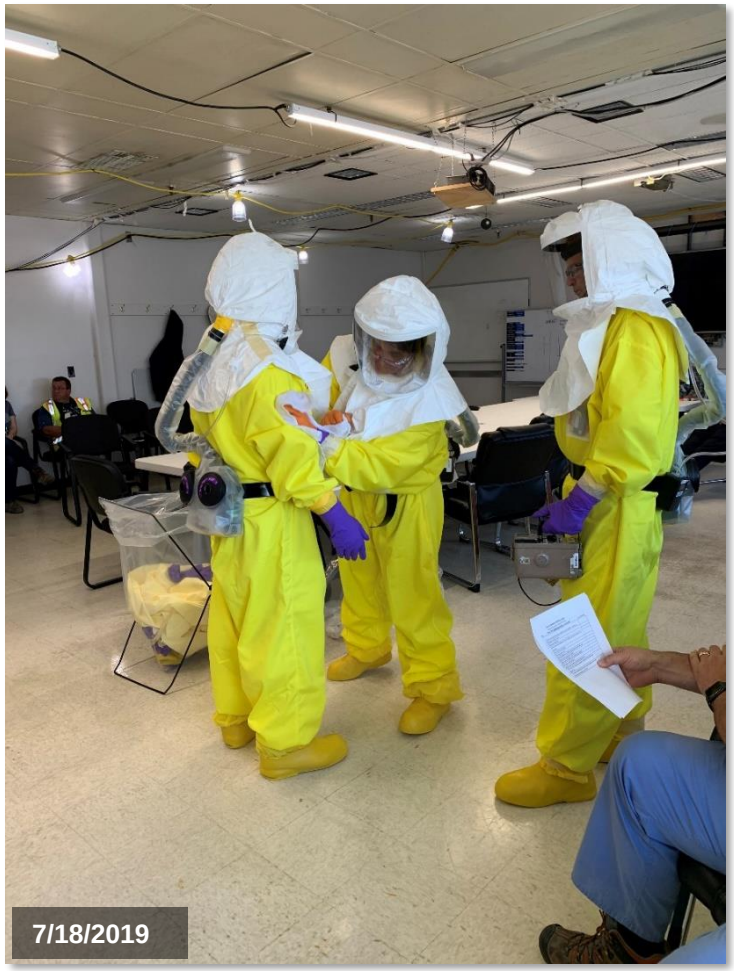
Pilot Hole No. 2 – Events

- **June 18, 2019** – initiated drilling second pilot hole
  - Found contamination on boots in radiological boundary area (RBA) at 5,000 dpm/100 cm² ß-γ and 7,500 dpm/100 cm² ß-γ on the RBA floor outside room 18
  - Material observed by drill operator escaping from drill break-out joint
  - Maximum airborne radioactivity was 1.5 DAC
  - Suspended all drilling activities
- Corrective action:
  - Sealed diverter using 4-inch duct tape
  - Removed tool joint from drill stem
  - Modified water delivery system to provide a steady mist
  - Increased water usage for dust control
  - Routed exhaust duct from negative air machine to zone II ventilation
  - Placed TACK-IT sticky paper around rig



Pilot Hole No. 2 – Events (Cont.)

- **June 24, 2019** – performed decontamination of room 18
  - Found contamination on worker's skin at 36,930 dpm/100 cm² ß-γ
  - Suspended all work in room 18
- Corrective action:
  - Required impermeable outer set
  - Trained workers on doffing new impermeable personal protective equipment. Workers must pass doffing proficiency test.
  - Expanded doffing area for exiting the high-contamination area
  - Built cooling tents to reduce heat stress
  - Provided decontamination training

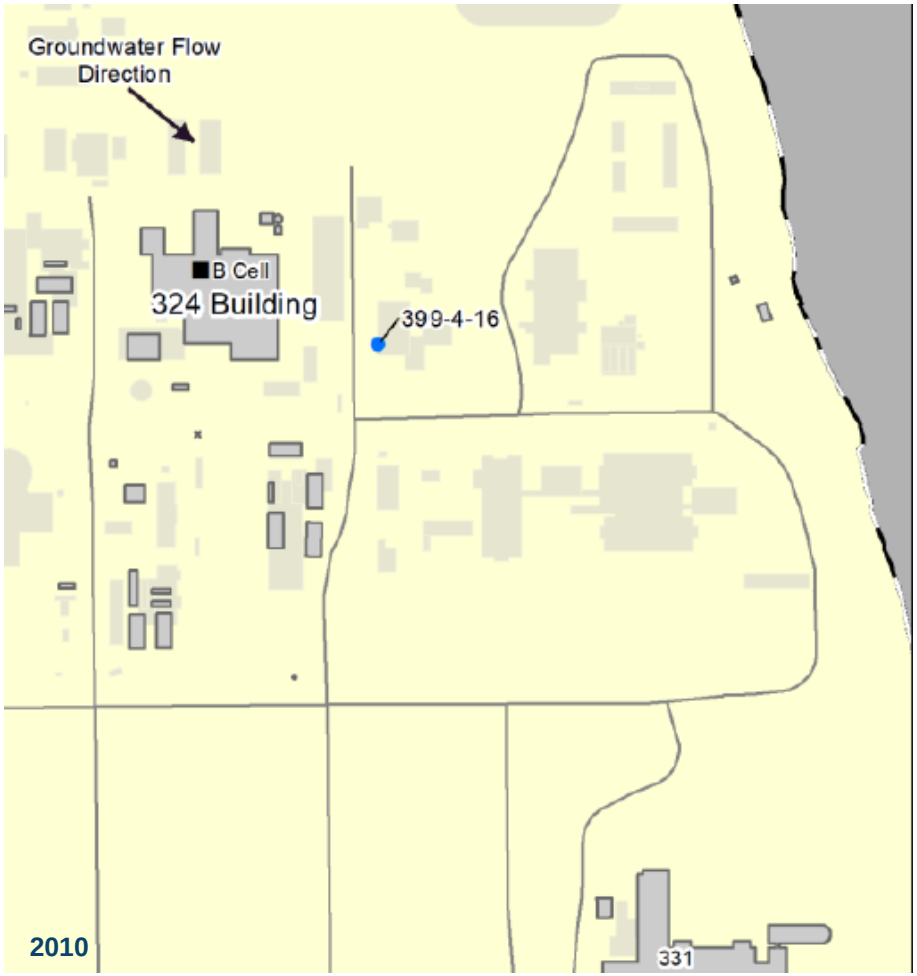


Pilot Holes

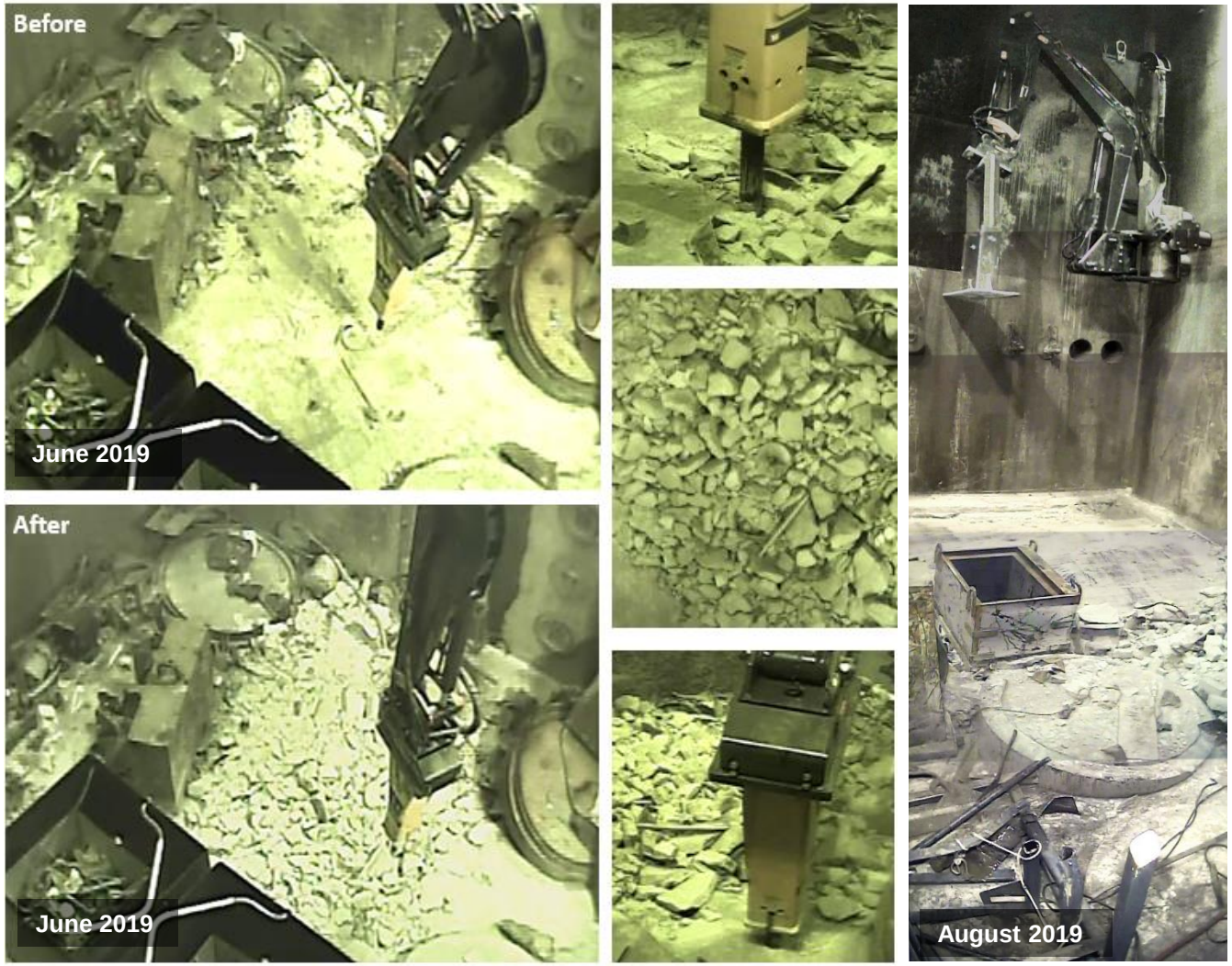
Pilot Hole Drilling Entries from February to July: 555 Individual Entries – Three Contamination Incidents
(One Scrubs, One Personal Boot, and One Skin)
August – One Contamination Incident (Hair)

324 Groundwater Monitoring

- Well 399-4-16 was installed downstream of the 324 Building
- Replaces geoprobe monitoring
  - No migration to groundwater
- Quarterly sampling starts next quarter



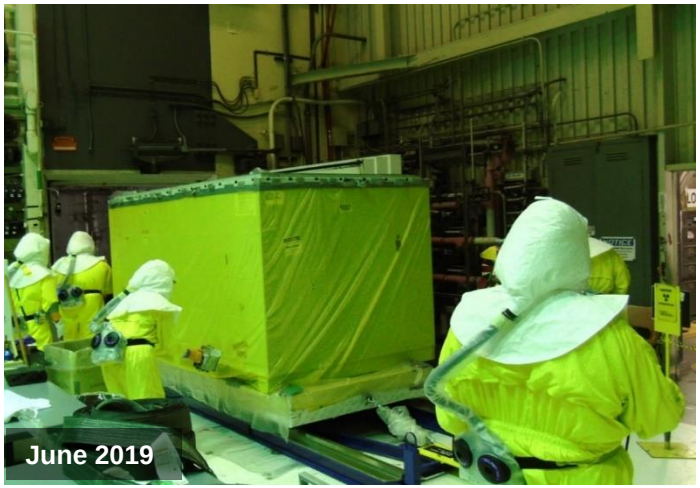
Recent Accomplishments



B-Cell Grout and Debris Removal

Recent Accomplishments

Loading First Waste Box with B-Cell Debris and Grout



Removal of Waste Box from the Airlock

First Shipment of Legacy Waste from B-Cell to the Environmental Restoration Disposal Facility

Takeaway Points

- Micropile construction in room 18 is a new activity at Hanford. Time will be taken, as needed, to incorporate process improvements and ensure continued worker safety
- Removal of contaminated debris from B-Cell with remotely operated equipment is 25% complete
- Sampling from the new groundwater monitoring well starts in October